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MONTANA WEATHER AND CROP SUMMARY

April 20, 1961

U. S. DEPARTMENT OF AGRICULTURE  
Agricultural Marketing Service

U. S. DEPARTMENT OF COMMERCE  
Weather Bureau

FALL AND WINTER 1960 - 1961

Temperature

It was unseasonably warm the first few days of October. Maximums were in the 80's at most East of the Divide stations. Warmest was 91 degrees at Crow Agency the 6th. For the rest of the month, temperatures varied from cool to seasonable and occasionally warm. But for the month as a whole, temperatures averaged close to the long-term means. November and December can be classified as "normal." The first cold snap of the winter was November 28 - 29 when minimums dropped below zero at most stations. Although zero minimums were observed at almost all stations in December, January, and February East of the Divide, unseasonably warm weather prevailed during January and February. There have been only five winters since 1895 with a warmer January-February combination than in 1961. Unusual warmth continued into March, but departures above the long-term means were not as large as in January and February.

Precipitation

The dry weather of last summer persisted throughout fall and winter seasons. Precipitation was heavier than usual West of the Divide in November and again in February. Some stations in the western edge and at higher elevations measured record, or near record, precipitation totals for February. The two eastern divisions also received slightly more than normal precipitation in February. Otherwise, precipitation was deficient. On March 24-27, a general storm brought the greatest amount of moisture to the State as a whole since August 1960. There were, however, a few areas that received very little moisture from this storm, and March precipitation averaged above the long-term means only West of the Divide and in the central division.

Severe Storms

There were a few severe storms. Freezing rain over a large area in Missoula, Mineral, Sanders and Lincoln counties

caused hazardous driving conditions January 5-6. On January 15-16, winds reached 70 to 90 MPH in Glacier, Pondera, Teton, and Toole counties, but damage was not extensive. High winds were experienced over much of the area East of the Divide with some damage in scattered areas February 25. It was windier than usual throughout the winter along the eastern slopes. The winds aggravated dry conditions by depleting soil moisture, and caused some soil erosion on the windiest days.

Water Supply Forecasts

The irrigation water supply outlook for the summer of 1961 is very unfavorable over much of the area East of the Continental Divide. Precipitation has been generally deficient throughout the area for the past seven months, and the mountain snowpack is the lowest in years. April through September streamflow forecasts, based on 1943-1957 averages are: Missouri at Toston 63%; and Fort Peck reservoir 74%; Yellowstone at Billings 62%; at Sidney 69%; Musselshell at Harlowton less than 50%; for the water year at Eastern Crossing on the Milk River 92%. Anticipated flow into Gibson reservoir is 84%. Very low water volumes for the season are expected in most Southeastern Montana streams. The situation West of the Divide is more favorable. Heavy snow and rain in February and March materially improved conditions. The Clark's Fork and Bitterroot rivers will have somewhat less than normal flow April through September, but the Flathead and Kootenai rivers will have near normal runoff. Percent of runoff April through September, based on the 15-year average from 1943 - 1957, is expected to be 67% for the Clark's Fork above Missoula, 75% at St. Regis, and 90% at Thompson Falls; Flathead at Columbia Falls and Poison 100%; and Kootenai at Libby 106%. Expected flow for the water year on the Bitterroot at the mouth 74% and the Blackfoot at Bonner 72%.

CROP AND LIVESTOCK SUMMARY, OCTOBER 1960-APRIL 1961

Weather conditions were very favorable for harvesting operations during October. Winter wheat went into the winter in below average condition because of the poor soil moisture situation. Late fall and winter pastures and ranges were in below normal condition from dryness.

The winter months were ideal for stockmen with unusually warm, storm-free weather. Livestock were able to graze virtually all of the winter. This relieved the pressure of hay shortages to the point where some people who were expecting serious deficiencies actually came out with surpluses. Much more than usual field work was accomplished in January, February and March.

Last summer's hot, dry weather, together with much less than usual precipitation during the winter, has created a poor outlook for agriculture this year. As of April 1, soil moisture was extremely short. In some eastern areas crop growth was retarded. Stockwater and irrigation water were deficient. On the brighter side, mild spring weather has benefited calving and lambing and better than average crops were reported. Winter wheat came through with only light winter kill and good stands.

The success of this year's agricultural production hinges almost completely on the amount and timeliness of rain during the coming growing season.

(Over)

Six-Month Total Precipitation, October 1960 - March 1961 (Inclusive)

WESTERN DIVISION

Station	6-Month		Station	6-Month	
	Precipitation	Long-term mean		Precipitation	Long-term mean
	--Inches--			--Inches--	
Alberton	9.04		Linbergh Lake	15.47	
Big Fork 12 S	8.05		Lolo Hot Springs	12.69	
Creston	8.48		Missoula 2 WNW	5.75	5.19
Darby	6.64	8.33	Missoula WBAS	5.66	5.67
Drummond FAA Ap	3.13	3.78*	Ovando 1 SW	5.62	8.13
East Anaconda	4.05	4.78	Ovando 7 WNW	4.25	
Elliston	3.46		Philipsburg	2.75	5.50
Eureka	6.01		Pleasant Valley	9.29	11.03
Fortine 1 NNE	9.56	8.30	Polebridge	12.40	
Garnet	10.43		Polson Airport	5.04	6.38
Hamilton	5.41	5.51	Polson Kerr Dam	5.69	
Haugan	24.67	21.98	Saint Ignatius	5.33	5.54
Heron 2 NW	25.09	24.23	Seeley Lake RS	11.33	
Hungry Horse Dam	21.16		Stevensville	4.63	6.18
Kalispell WBAS	6.74	7.71	Sula	7.82	
Kalispell	6.52		Summit	25.53	
Libby RS 1 NE	12.45	11.77	Superior	9.63	8.69
Libby 32 SSE	16.29		Thompson Falls PH	15.31	12.42
			Trout Creek 2 W	19.57	22.44
			Troy RS	18.62	
			West Glacier	17.11	16.18

SOUTHWESTERN DIVISION

Alder 17 S	1.57		Jackson	2.52	
Belgrade FAA AP	1.94	4.78*	Lakeview	7.06	
Boulder State School	1.52		Lima	1.51	2.87*
Bozeman Agr. College	4.35	6.64	Norris 3 ENE	2.33	
Bozeman 12 NE	11.62		Norris Madison PH	4.41	5.75
Butte FAA AP	1.75	3.99	Pony	4.74	
Dillon FAA AP	1.68	2.14*	Trident	2.06	
Dillon WMCE	1.48	3.34	Twin Bridges	1.17	
Divide 2 NW	1.61		Virginia City	3.16	4.51
Ennis	.87	2.29	West Yellowstone	11.91	11.57
Glen 4 N	1.01		Whitehall	1.77	2.05*
Hebgen Dam	16.33	14.63	Wisdom	1.89	

NORTH CENTRAL DIVISION

Babb 6 NE	4.95	6.08	Goldbutte 7 N	2.09	
Big Sandy	1.21	2.73	Harlem	2.38	3.23
Blackleaf	2.60		Havre WBO	2.36	3.27
Brady Aznoe	.87		Hays	2.30	
Browning	4.93	4.61	Iliad	1.84	
Chester	1.76		Joplin 1 N	1.16	
Chinook	1.97	3.27	Malta	2.12	3.01
Choteau	1.11	2.06	Phillips 1 S	1.42	
Cleveland 5 ENE	1.42		Shelby	1.17	
Conrad	1.85	2.73	Shonkin 7 S	4.31	
Cut Bank FAA AP	1.86	2.43	Simpson	1.88	1.98
Dunkirk 14 NNE	1.73	2.71	Sweetgrass	1.61	
Fairfield	1.64	2.20	Telegraph Creek	1.17	
Forks 5 NE	2.20		Tiber Dam	0.99	
Fort Assiniboine	1.96	2.56	Turner	2.10	
Fort Benton	1.61	4.33*	Valier	1.84	2.51
Geraldine	2.17				

CENTRAL DIVISION

Augusta	2.40	3.66	Lewistown FAA Ap	1.59	4.68
Austin 1 W	4.34		Lincoln 14 NE	6.42	
Barber	1.61		Lincoln RS	5.16	
Canyon Ferry PH	1.50		Lennepe	4.79	
Cascade 5 S	1.86	3.87	Martinsdale	1.88	2.98*
Cascade 20 SSE	1.47		Melstone	1.16	3.34
Flatwillow 4 ENE	1.12	3.06	Moccasin Exp. Sta.	2.04	3.22
Gibson Dam	6.84	5.30	Raynesford	1.62	
Grass Range	1.78		Roundup	.85	2.77
Grass Range 15 NNE	1.10		Roy 8 NE	1.13	
Great Falls WBAS	2.31	4.20	Stanford 2 NE	2.47	3.82
Harlowton	1.50		Sun River	1.69	
Helena WBAS	2.00	3.60	Toston 3 SW	2.90	
Holter Dam	1.44	3.52	Townsend	1.53	
Kings Hill	10.56		White Sulphur Springs	5.30	7.42

\*Means for short-term period of record 1955.



Six-Month Total Precipitation, October 1960 - March 1961 (Inclusive)

SOUTH CENTRAL DIVISION

<u>Station</u>	<u>Precip- tation</u>	<u>6-Month Long-term mean</u>	<u>Station</u>	<u>Precip- tation</u>	<u>6-Month Long-term mean</u>
	- Inches -			- Inches -	
Belfry	.56		Joliet	2.18	
Big Timber	2.63	4.44	Kirby 1 S	3.76	
Billings Water Plant	2.23		Livingston	2.27	4.29
Billings WBAS	3.04	4.30	Livingston FAA AP	2.90	3.84*
Bridger	2.20		Mystic Lake	5.29	8.99
Broadview	2.01		Nye	4.32	
Columbus	1.91	3.93	Nye (Mouat Mine)	6.08	
Crow Agency	3.93	5.28	Rapeljie 4 S	2.58	3.66
Hardin	2.48		Red Lodge	6.49	6.40
Huntley Exp. Sta.	1.88	3.55	Wilsall	3.08	
Hysham	1.67		Wilsall 8 ENE	5.00	
Hysham 19 SSE	2.83		Wyola	3.92	5.35*
			Yellowstone Park NE	9.54	

NORTHEASTERN DIVISION

Bredette	1.21		Nohly 3 WNW	1.68	
Brockway	.76		Opheim 10 N.	1.25	
Circle 7 N	.99	2.06	Opheim 12 SSE	.78	
Culbertson	2.23	2.58	Poplar	1.78	2.50
Fort Peck PH	1.14		Raymond Border Sta.	2.71	
Frazer	1.48	3.35	Redstone	1.33	
Glasgow WBAS	1.87	3.19	Richey	1.81	
Glendive	2.18	2.89	Savage	1.68	2.67
Haxby 18 SW	1.48	3.11	Scobey	1.83	
Hinsdale	1.50		Sidney	2.05	
Jordan	1.06	2.48	Thoeny	1.66	
Lustre 4 NNW	.89	2.03	Vida	2.23	4.67
Medicine Lake 3 SE	3.44	2.34	Westby	1.82	
Mosby 2 ENE	.80		Wolf Point	1.89	
Mosby 18 N	.68				

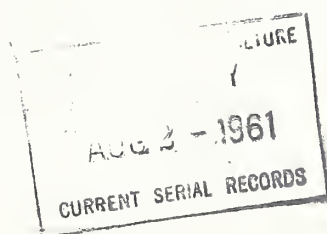
SOUTHEASTERN DIVISION

Albion	.93		Mildred	1.12	2.89
Birney 2 SE	1.81		Miles City	2.41	
Boyes	2.05		Miles City FAA AP	2.26	3.47
Brandenberg	1.99		Mizpah	1.91	
Broadus	2.71	3.76*	Moorhead	2.44	
Colstrip	2.51	4.73	Plevna	1.38	3.05
Ekalaka	1.48	2.95	Ridgway	1.18	
Forsyth 2 E	1.35		Terry	.73	
Ingomar 11 NE	1.00		Wibaux 2 E	1.89	
Lame Deer	2.97				

\*Means for short-term period of record 1955.

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